

## **ABSTRACT**

A spirometric system can be used to determine static and dynamic lung function for diagnosis, therapy and evaluation. In recent years, air pollution and deteriorating environment cause respiratory diseases increasing rapidly. A portable spirometric system, which for home care and possible screening test in the hospital is the answer to this needs. Recently, the established technologies of microelectromechanical system (MEMS) have enabled the possible minimization of spirometer with microsensor. It includes the modular design for low power consumptions, precision volume productions, competitive price for disposable sensors. In this invention, the focus is to improve sensor's performance by using MEMS technologies and material selection. Fabricating microsensor uses semiconductor processes, which aims to increases sensor's performance and lower cost by future mass production. The use of American Thoracic Society (ATS) guidelines for system implementation assures the quality of system for future upscale production of safe and quality device.

### **A Micro-Machined Hot-Wire Flow Sensor for Spirometer**